







Sub. Code / Sub. Name: **CH18003 / AER POLLUTION AND CONTROL**

Unit :II

**Unit Syllabus: AIR POLLUTION GASES**

Measurement fundamentals – chemicals and physical properties – Phase Equilibrium conservation laws – Incinerators – Design and Performance – Operation and Maintenances - Absorbers – Design operation and improving performances Absorbers.

**Objective:** Apply the concepts of Phase Equilibrium conservation laws and design operation and improvements performance of various pollution control equipments in designing of equipments.

Session No *	Topics to be covered	Reference	Teaching Aids
1	Measurement fundamentals- units for measurement and conversion	T1-Ch 3.2, Pg 27	PPT
2	chemicals and physical properties- property types	T1-Ch 3.3, Pg 29	PPT
3	Phase Equilibrium and conservation laws- conservation of mass and conservation of energy	T1-Ch 3.5, Pg 41	PPT
4	Incinerators- types of incinerators	T1-Ch 4.1, Pg 69	PPT
5	Design and Performance -How incinerators designed and its performance	T1-Ch 4.2, Pg 79	PPT&BB
6	Operation and Maintenances- Operating conditions and its maintenance	T1-Ch 4.3, Pg 84	PPT&BB
7	Absorbers- Types of absorbers, Single-Component Absorption	T1-Ch 5.1, Pg 127	PPT&BB
8	Design operation and improving performances of Absorbers.	T1-Ch 5.3, Pg 142	PPT&BB
9	<b>Review -II</b>		

**Content beyond syllabus covered (if any):**

\* Session duration: 50 mins





Sub. Code / Sub. Name: **CH18003 / AIR POLLUTION AND CONTROL**

Unit :III

**Unit Syllabus :PARTICULATE AIR POLLUTION**

Particle Collection mechanisms – Fluid particle Dynamics – Particle size Distribution –Efficiency – Gravity Settling chambers Cyclones – Electrostatic precipitators, Bag houses

**Objective:**Analyze the concepts ofParticle size Distribution and collection mechanism of cyclones, electrostatic precipitators and bag houses

Session No *	Topics to be covered	Reference	Teaching Aids
1	Particle Collection mechanisms-impaction, diffusion ,Other collection mechanisms	T1-Ch 7.2, Pg 249	PPT
2	Fluid particle Dynamics	T1-Ch 7.3, Pg 252	PPT
3	Particle-size distribution-Types of collection of particulate matter	T1-Ch 7.5, Pg 262	PPT
4	Particle-size distribution-Significance in the collection of particulate matter	T1-Ch 7.5, Pg 262	PPT
5	collection mechanism and efficiency	T1-Ch 7.6, Pg 267	PPT
6	Gravity Settling chambers- types ,Operation and Maintenance, and Improving Performance Problems	T1-Ch 8.1, Pg 315-324	PPT&BB
7	Cyclones- collection mechanism and its efficiency	T1-Ch 9.1, Pg 361	PPT&BB
8	Electrostatic precipitators-collection mechanism and its efficiency	T1-Ch 10.1, Pg 399	PPT&BB
9	Bag houses-Design and Performance Equations	T1-Ch 12, Pg 503-511	PPT&BB
10	<b>Review -III</b>		

**Content beyond syllabus covered (if any):**

\* Session duration: 50 mins





Sub. Code / Sub. Name: **CH18003 / AIR POLLUTION AND CONTROL**

Unit :IV

**Unit Syllabus :HYBRID SYSTEM**

Heat electrostatic precipitation –IONIZING Heat Scrubbers – Dry Scrubbers –Electrostatically Augmented Fabric Filtration

**Objective:** Apply the concepts of Heat electrostatic precipitation, scrubbers and Electrostatically Augmented Fabric Filtration in separation processes

Session No *	Topics to be covered	Reference	Teaching Aids
1	Heat electrostatic precipitation- Introduction	T1-Ch 12 A.2, Pg 550	PPT
2	Heat electrostatic precipitation -Design and Performance Equations	T1-Ch 12 A.2, Pg 550	PPT
3	Heat electrostatic precipitation - Operation and Maintenance, and Improving Performance Problems	T1-Ch 12 A.2, Pg 550	PPT
4	Modern industrial electrostatic precipitators	T1-Ch 12 A.2, Pg 550	PPT
5	IONIZING Heat Scrubbers-Types and its performance	T1-Ch 12 A.3, Pg 550	PPT
6	Dry Scrubbers- performance and its effects	T1-Ch 12 A.4, Pg 551	PPT
7	Electrostatically Augmented Fabric Filtration and its design	T1-Ch 12 A.5, Pg 552	PPT
8	<b>Review -IV</b>		

**Content beyond syllabus covered(if any)**

\* Session duration: 50 mins





Sub. Code / Sub. Name: CH18003 / AIR POLLUTION AND CONTROL

Unit :V

**Unit Syllabus: AIR POLLUTION CONTROL EQUIPMENT**

Introduction – Installation – Cost Model.

**Objective:** Analyze the concepts of installation and cost estimation model for pollution control equipments

Session No *	Topics to be covered	Reference	Teaching Aids
1	Introduction	T1-Ch 9.1, Pg 361	PPT
2	Installation of Absorbers	T1-Ch , Pg 143	PPT&BB
3	Installation of Cyclone separators	T1-Ch 9, Pg 376	PPT&BB
4	Installation of electrostatic precipitators	T1-Ch 10, Pg 415	PPT&BB
5	Installation of Scrubber	T1-Ch 11, Pg 462	PPT&BB
6	Cost estimation model for Absorbers	T1-Ch 5, Pg 143	PPT&BB
7	Cost estimation model for Cyclone separators	T1-Ch 9, Pg 376	PPT&BB
8	Cost estimation model for electrostatic precipitators	T1-Ch 10, Pg 415	PPT&BB
9	Cost estimation model for Scrubber	T1-Ch 11, Pg 462	PPT&BB
10	<b>Review -V</b>		

**Content beyond syllabus covered (if any):**

\* Session duration: 50 mins






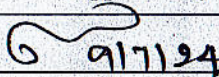
Sub Code / Sub Name: **CH6004/ AIR POLLUTION AND CONTROL**

**TEXT BOOKS:**

1. Air Pollution Control Equipment Louis Theodore, Burley Intuscence 2008.
2. Air Pollution Control CD Cooper and FC.AlleyWairland Press III Edition 2002.

**REFERENCES:**

1. Air Pollution Control Engg, Noel de nevers– Mcgrew Hill,2011
2. Handbook of Air Pollution Prevention and Control, Nicholas P Cheremisinoff,2002

	Prepared by	Approved by
Signature		
Name	Mr. S Rajasekar	Dr. N Meyyappan
Designation	Assistant Professor	Professor & Head of the Department
Date	09.07.2024	09.07.2024
Remarks *:		
Remarks *:		

\* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD